

REMARKS

Claims 3-8 are pending in this applications and are rejected. Claims 1-2 and 9-11 have been canceled in response to a restriction requirement. Fig. 1 is objected to.

A response to the Office Action has been submitted previously. In that response, Applicants amended the claims and amended Fig. 1 by adding the legend "Prior Art."

As explained in the Communication, that response was deemed to be not fully responsive to the Office Action because it did not include arguments pointing out disagreements with the Examiner's contentions and because it did not discuss the references cited against the claims.

This Supplement is submitted in response to the Communication.

Rejection of Claims Under § 112

Claims 3-8 are rejected under 35 U.S.C. § 112, second paragraph for specified defects.

In response, Applicants amend the claims as shown in their previous response and request reconsideration.

Rejection of Claims Under § 102

Claims 4-7 are rejected under 35 U.S.C. §§ 102(b) as being anticipated by U.S. patent 5,594,652 (referred to as "Penn").

In response, Applicants amend claims 4, 6 and 7 as shown in their previous response and request reconsideration in the view of the following comments.

Penn discloses methods and systems for using a computer to control the manufacture of a three-dimensional object. A basic method manufactures an object by performing the following steps (see col. 3 ln. 62 to col. 4 ln. 19):

- (1) dispense onto a platform a layer of liquid insoluble material, which hardens
- (2) spray water soluble media to encapsulate the hardened insoluble material
- (3) plane the upper surface of the encapsulated hardened material
- (4) dispense onto the planed surface a layer of liquid insoluble material, which hardens
- (5) spray water soluble media to encapsulate new layer of hardened insoluble material
- (6) plane the upper surface of the new layer of encapsulated hardened material
- (7) repeat steps (4) through (6) as needed to construct the desired object

The disclosed method may be performed using devices like the following (col. 6 lns. 59-62):

... Independent, computer-addressable dispensing devices 10 are preferably inkjets, such as those on colored plotters or inkjet page printers, adapted to spray melted wax, plastic, or other material.

Penn further discloses that selected layers and selected locations within a layer can be colored differently (col. 4 lns. 50-52). This may be achieved as follows (col. 9 lns. 38-49):

... a system according to the present invention uniquely enables an object to be fabricated with high resolution color features. ... Material(s) 25 may be of different material colors or color combinations, as well as different material composition. To achieve any desired level of visual realism, the colors cyan, magenta, yellow, black, and white are preferred since any intermediate hue of the full color spectrum can be obtained by material overlap or dithering.

Applicants are unable to discover anything else in Penn that pertains to producing a colored object.

Amended claim 4 reads as follows:

4. (amended) A process for producing a colored shaped article comprising a plurality of layers formed by lamination and shaping of a curable resin, wherein at least one layer of said plurality of layers has a colored region, this process comprising the steps of:

forming an external wall by curing a portion of a liquid state curable resin corresponding to a region of prescribed width along a contour line of said colored region;

forming said colored region by adding a colorant to said liquid state region inside said external wall; and
curing said colored region.

Penn does not disclose or suggest any of the claimed steps. Specifically, Penn does not teach (1) forming an external wall by curing a portion of a layer of resin, (2) adding a color to a liquid region inside the external wall, or (3) curing the colored region of a curable resin (other types of materials and other processes are disclosed in Penn, including solidification of a melted material).

The Office Action indicates all features of original claim 4 are disclosed in col. 6 lns. 55-65 and in Figs. 1-17d of Penn but Applicants are unable to understand how any of this material is particularly relevant. The cited text merely describes suitable devices that may be used (the text is silent with regard to manufacturing method) and the reference to the figures appears to be only a general reference to all figures. No figure appears to be relevant but Applicants believe even a casual glance to Figs. 1a-3, 5-6b, 9a-13 and 15a-17d will show they cannot possibly disclose or illustrate anything that is relevant to the claimed methods.

Claims 5-7 are dependent on claim 4 and add further limitations that are not disclosed or suggested in Penn. The Office does not provide any details to support its assertion that Penn discloses the features of these claims; therefore, Applicants cannot respond with any particularity.

With regard to claim 5, Penn does not disclose or suggest forming partition walls by curing the partition zones of prescribed thickness inside the region which is to be colored prior to adding a colorant.

With regard to claim 6, Penn does not disclose or suggest adding a prescribed amount of colorant at prescribed distance intervals by using an addition mechanism displaced by feedback-corrected pulse signals.

With regard to claim 7, Penn does not disclose or suggest removing the liquid state curable resin present in said region which is to be colored and adding the colorant into said region after the removal of said curable resin.

Rejection of Claims Under § 103

Claims 3 and 8 are rejected under 35 U.S.C. §§ 103(a) as being unpatentable over Penn.

In response, Applicants amend claim 3 as shown in their previous response and request reconsideration in the view of the preceding comments for claim 4.

With regard to claim 3, as explained above, Penn does not disclose or suggest forming a non-colored region in a layer of curable resin by curing a first portion of a liquid state curable resin, or forming a colored region by adding a colorant into a second portion of the liquid state curable resin, wherein the second portion is surrounded by the first portion. Instead, Penn discloses a different process that is explained in the text at col. 9 lns. 38-49, quoted above.

With regard to claim 8, this claim is dependent on claim 4 and adds further limitations that are not disclosed or suggested in Penn.

If the rejection of any claim is maintained, Applicants respectfully request that the next Office Action specifically point out where each claimed feature is disclosed in the prior art.

CONCLUSION

Applicants amend the claims as shown in a previous response and request reconsideration.

Respectfully submitted,


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Certificate of Transmission

I certify that this Supplement to Response to Office Action and any following materials are being transmitted by facsimile on September 14, 2005 to the U.S. Patent and Trademark Office at telephone number (571) 273-8300.



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